REMARKS

This communication responds to the Office Action mailed on April 7, 2005. No claims are amended, no claims are canceled, and no claims are added. Claims 23-30 have been withdrawn via restriction requirement imposed by the Examiner. As a result, claims 1-22 are now pending in this Application.

§102 Rejection of the Claims

Claims 1-7, 9, 10, 14, 15, 17 and 19-22 were rejected under 35 USC § 102(b) as being anticipated by Dinter et al. (U.S. 5,759,649; hereinafter "Dinter"). Claims 1, 2, 8, 12-14, 16 and 20 were rejected under 35 USC § 102(b) as being anticipated by Crandall et al. (U.S. 5,474,827; hereinafter "Crandall"). Claims 1-5, 7-9, 11, 14-16, 20 and 22 were rejected under 35 USC § 102(b) as being anticipated by Hisanaka et al. (U.S. 6,117,524; hereinafter "Hisanaka"). Claims 1, 2, 4, 9, 14, 15, 18 and 20 were also rejected under 35 USC § 102(b) as being anticipated by Brady et al. (U.S. 6,140,146; hereinafter "Brady"). The Applicant does not admit that Dinter, Crandall, Hisanaka, or Brady are prior art and reserves the right to swear behind these references at a later date. In addition, because the Applicant asserts that the Office has not shown that Dinter, Crandall, Hisanaka, or Brady disclose the identical invention as claimed, the Applicant traverses these rejections of the claims.

It is respectfully noted that anticipation under 35 USC § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration. *See Verdegaal Bros. V. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). "The *identical invention* must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added).

First, regarding independent claims 1 and 14 (and claims 2-13 and 15-22 depending from them), it is respectfully noted that Dinter does not teach the existence of "a heat sink," nor a "unitary layer of electrically non-conductive material" as claimed by the Applicant. While it has been asserted that the "heat sink" is "atmospheric air outside of the packaging, figure 5)", the Applicant is unable to find this element in FIG. 5 of Dinter. In fact, the Applicant was unable to find the term "sink" used anywhere within the bounds of Dinter.

Further, the assertion that "atmospheric air" may take the place of a heat sink is incorrect. According to the *Radio Shack Dictionary of Electronics*, 1976-76, a heat sink is "a mounting base, usually metallic, that dissipates, carries away, or radiates into the surrounding atmosphere the heat generated within a semiconductor device." Thus, since the heat sink radiates into the surrounding atmosphere, the atmosphere itself can not serve as the heat sink.

This same deficiency with respect to a lack of teaching regarding a heat sink is noted with respect to Crandall, Hisanaka, and Brady. The Applicant could not find the proposed heat sink as an element in any figures of the cited art, and even if such were found, air may not act as a heat sink on its own.

A related deficiency exists with the teachings of Crandall, Hisinaka, and Brady respecting a "heat source." The Applicant could not find the proposed heat source as an element of any figures in the cited art, since there was nothing in the cited references to show that the proposed source of heat was at a temperature any higher than that of the surrounding environment.

Second, the inner layer 4 of Dinter is not "a unitary layer of electrically non-conductive material" as claimed by the Applicants; it must be used in conjunction with an electrically conductive intermediate layer 6, otherwise the apparatus of Dinter is rendered non-functional. This is supported by the text of Dinter, where it is noted that apparatus having "additives [that] do not ensure permanent conductivity of the polymer over the entire duration of its intended use" are unsatisfactory. *See* Dinter, Col. 1, lines 27-35. In addition, even the minimal configuration described by Dinter, for use with "less critical products" recites "... a two-layered composite film combination ... in this case, the composite film combination then comprises a polymeric inner layer with perforations and an electrically conductive outer layer, connected to ground potential." Dinter, Col. 4, lines 33-40.

This same deficiency with respect to a lack of teaching regarding a unitary layer of material is noted with respect to Hisanaka, where a composite web 200 is proposed in the Office Action as the "unitary layer of electrically non-conductive material". In fact, the composite web 200 is not unitary, but comprises two components: a web 1 and a fibrous layer 2 (as is the case with composite web 100). *See* Hisanaka, Col. 6, lines 18-20.

Third, the assertion in the Office Action with respect to the size of the openings in the surface of the unitary layer in Dinter is incorrect. Dinter says "the spacing between individual openings lies in a range of between 5 and 30 mm" and "the average diameter of the openings may lie between .2 and 10 mm." Dinter, Col. 3, lines 14-17. Assuming the largest openings (10 mm) spaced the shortest distance apart (5 mm) provides the greatest surface area coverage, the combined opening area over the surface is substantially less than the 90% and 95% amounts claimed by the Applicant in claims 6-7 and 21-22.

This same deficiency with respect to a lack of teaching regarding the size of the openings is noted with respect to Hisanaka, where the composite web 200 is proposed in the Office Action as the "unitary layer of electrically non-conductive material". While the "upper surface of the web 1" may have openings that that occupy between 1% and 70% of the surface area, it is respectfully noted that the composite web 200 also includes the fibrous layer 2, and the openings in the fibrous layer 2 must also be taken into account. *See* Hisanaka, Col. 6, lines 29-31. Thus, there is no support for the assertion that Hisanaka teaches a combined surface area for the openings of 90% or 95%, as claimed by the Applicant in claims 6-7 and 21-22.

Fourth, the assertion in the Office Action that Dinter discloses a "thermal interface material" as the container outer layer 8 is incorrect. According to an Internet-based encyclopedia, "thermal interface material (aka TIM) is used to fill the gaps between thermal transfer surfaces, such as between microprocessors and heatsinks, in order to increase thermal transfer efficiency. These gaps are normally filled with air which is a very poor conductor." *See* http://en.wikipedia.org/wiki/Thermal_interface_material. There is no teaching or suggestion by Dinter that the container outer layer 8 can act as a thermal interface material, as claimed by the Applicant in claims 10 and 17. Further information regarding thermal interface material (and

heat sinks) can be found in "Thermal Management Solutions for Electronics", published by Saint-Gobain Performance Plastics Corporation, 2004, attached hereto as Appendix A.

Fifth, the assertion in the Office Action that Dinter discloses a "die" as the filling tube 2 is incorrect. According to the glossary in *Microchip Fabrication*, a die is "one unit on a wafer separated by scribe lines ...; after all of the wafer fabrication steps are completed, die are separated by sawing ... ." *Microchip Fabrication*, pg. 600, McGraw-Hill, 2000. There is no teaching or suggestion in Dinter that the filling tube 2 is a die, as claimed by the Applicant in claim19.

Sixth, the assertion in the Office Action that Dinter discloses a "heat spreader" as part of the heat sink "since atmospheric air disspates, i.e. spreads heat" is incorrect. As noted above, air can't be used as a heat sink, and so there is no support in Dinter to provide a "heat spreader" as claimed by the Applicant in claim 20.

This same deficiency with respect to a lack of teaching regarding a heat spreader is noted with respect to Crandall, Hisanaka, and Brady. The Applicant could not find the proposed heat spreader as an element of any figures in the cited art, and even if such were found, air may not act as a heat sink (or heat spreader) on its own.

Seventh, it is asserted in the Office Action that Crandall provides, with respect to claim 8, a combined area of openings on the first surface that is different from the combined area of openings on the second surface. This is incorrect, since the microspheres of Crandall are symmetric, and therefore, the openings on one side of a layer of the microspheres must be the same size as the openings on the other side of the microspheres.

Eighth, it is asserted in the Office Action that Crandall provides, with respect to claim 13, a thermally conductive material located in selected ones of the openings, as claimed by the Applicant. This is incorrect, since the reflective metal of Crandall is a single layer, and permits no protrusion of the microspheres. Thus, there are no openings to be filled by the reflective metal – it is a closed surface that cannot be separated to fill openings.

Ninth, it is asserted in the Office Action that Hisanaka provides, with respect to claims 2-5, a plurality of openings comprising a regular geometric shape, including circular and square shapes, as claimed by the Applicant. This is incorrect, since the edges 18, 19 of the openings in

the composite web 200 of Hisanaka comprises irregular shapes (see FIG. 5, for example). Thus, Hisanaka does not teach regularly shaped openings.

Tenth, it is asserted in the Office Action that Hisanaka provides, with respect to claims 9 and 15, a polymer that is electrically non-conductive. This is incorrect, since the Applicant can find no support whatever within the bounds of Hisinaka to show that the polymeric web 1 is electrically non-conductive. As noted by Dinter, polymers can be conductive, or non-conductive. *See* Dinter, Col. 1, lines 22-40. Neither instance is taught by Hisinaka.

Eleventh, it is alleged in the Office Action that Hisanaka provides, with respect to claim 16, a unitary layer having a substantially uniform thickness of about 0.05 mm. While it is true that the flat portions 8 of the web 1 may be about 0.05 mm thick, this does not include the height of the bridge-like portions 10, nor of the edges 18, 19. Further, it ignores the existence of the fibrous layer 2. Thus, Hisinaka does not teach "a unitary layer of electrically non-conductive material [that] has a substantially uniform thickness of about 0.05 mm" as claimed by the Applicant.

Finally, it is alleged in the Office Action that Brady provides, with respect to claim 1, a unitary layer that comprises a plurality of openings communicatively coupled between the first surface and the second surface. This is incorrect, since only a single aperture 320 is shown for each RFID IC 114. Thus, Brady does not teach a plurality of openings between the first surface adjacent a heat sink, and a second surface adjacent a heat source, as claimed by the Applicant (in fact, the RFID ICs in roll form are un-powered, and therefore can not serve as a heat source, as mentioned above).

Therefore, since neither Dinter, nor Crandall, nor Hisanaka, nor Brady teach all of the elements claimed by the Applicant, it is believed that independent claims 1 and 14 (and claims 2-13 and 15-22 that depend from them) are in condition for allowance. Reconsideration and withdrawal of the rejection under § 102 is respectfully requested.

Conclusion

The Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney, Mark Muller at (210) 308-5677, or the Applicant's below-named representative to facilitate prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date June 7, 2005

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7th day of June 2005

John D. Gustav-Wrathall
Name

Signature

APPENDIX A

THERMAL MANAGEMENT SOLUTIONS FOR ELECTRONICS

Saint-Gobain Performance Plastics Corporation, 2004